



Ambulatory Blood Pressure Report Management System

90121

Operations Manual

070-0529-00 Rev. J

more time to care



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Overview

The Ambulatory Blood Pressure (ABP) Report Management System communicates with Spacelabs Medical 90202, 90207, 90217 ABP monitors and data card to retrieve, display, edit, and print ABP data.

ABP information can be imported into and exported from the ABP Report Management System for use on any Windows-based PC.

System Requirements

Minimum Hardware

- IBM-compatible 386 MHz processor or higher
- 640 KB + 4 MB of extended memory
- 3.5" 1.44 MB floppy drive
- VGA monitor (640 × 480)
- 40-MB hard drive with 20 MB of space available
- Two-button mouse

Recommended Hardware

- 486DX 50 MHz processor
- EISA bus architecture
- Super VGA monitor (1024 H × 768 V)
- 8 MB or more of RAM
- 340-MB or larger hard drive with 20 MB of space available
- Microsoft-compatible, two-button mouse

Optional Hardware

- Optional removable storage media (Optical, magneto-optical, Bernoulli, or floptical)
- Network card

Required Software

- Microsoft Windows 3.1 or later

Desktop Features

The ABP Report Management System operates similar to any Windows application. The desktop contains the menu bar and toolbar options used to access all system functions.

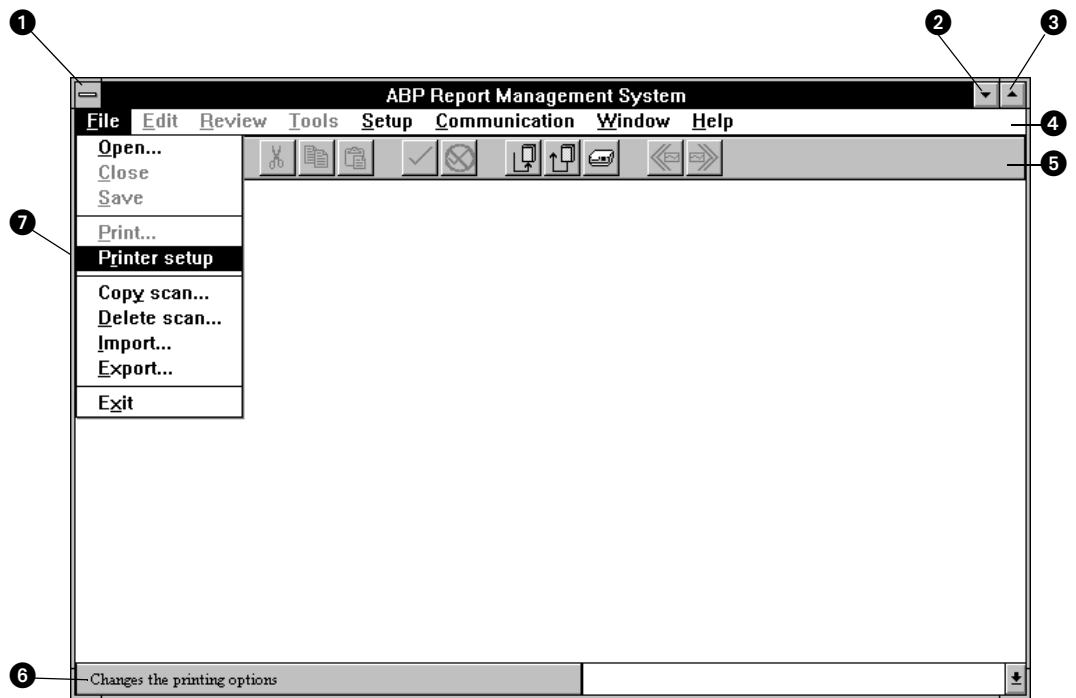


Figure 1-1: ABP Report Management System desktop

- ❶ System menu button — displays a menu of the main window functions, including **Restore**, **Move**, **Size**, **Minimize**, **Maximize**, **Close**, and **Switch To**.
- ❷ Minimize button — reduces the window to an icon.
- ❸ Maximize button — enlarges the size of the main window to fill the entire screen.
- ❹ Menu bar — contains main menu options for ABP report management.
- ❺ Toolbar — contains icons for quick access to commonly used functions. The icons (from left to right) represent **Open**, **Close**, **Save**, **Print**, **Cut**, **Copy**, **Paste**, **Mark all**, **Unmark all**, **Initialize Monitor**, **Read Monitor**, **Read Card**, and left and right **Graph Scroll** arrows.
- ❻ Status bar — displays information relevant to selection.
- ❼ Menu commands — provide access to the functions available on the selected menu option.

Multiple Document Interface (MDI)

The ABP Report Management System uses the multiple document interface (MDI) feature to provide multiple window operation. This feature enables you to simultaneously view more one window at a time so that you may view different information from the same scan (for example, patient information in one window and raw data in another).

The **Window** menu allows you to arrange and position multiple windows on the screen. The menu commands available are **Tile Vertically**, **Tile Horizontally**, **Cascade**, and **Close All**. The figures below illustrate the various ways windows can be displayed.

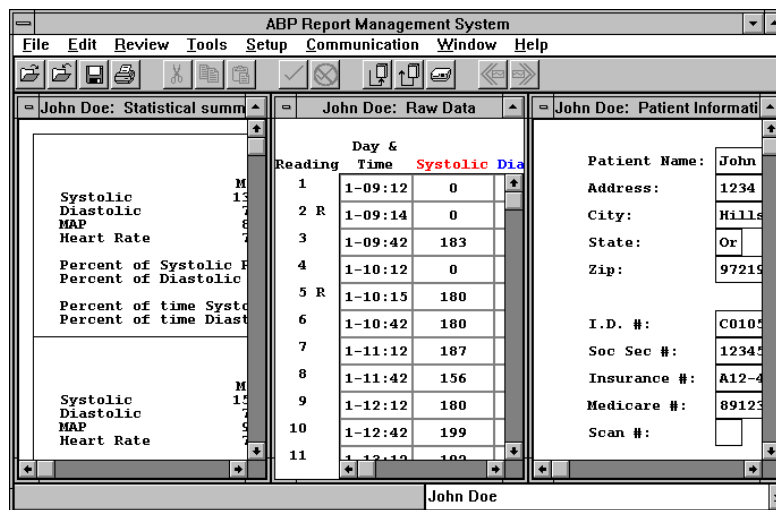


Figure 1-2: Vertically tiled windows

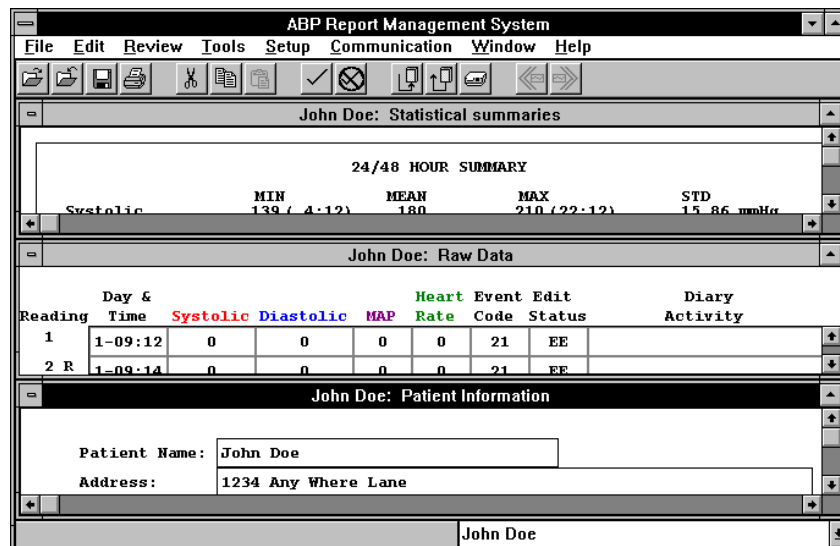


Figure 1-3: Horizontally tiled windows

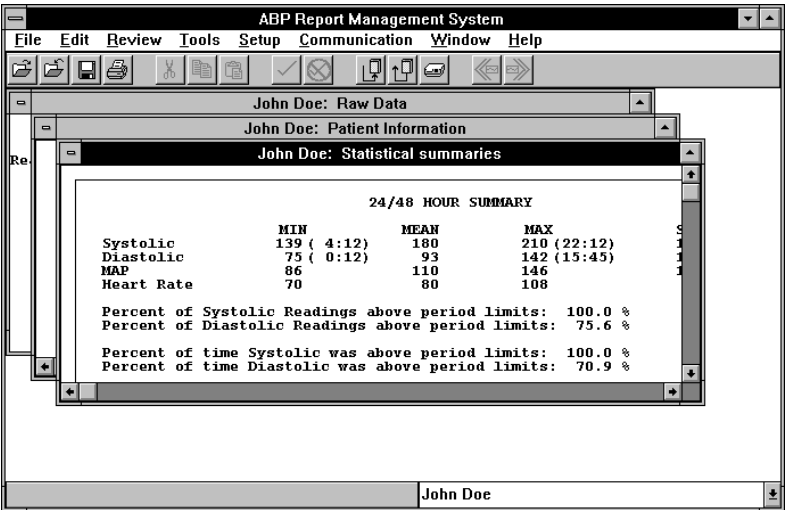


Figure 1-4: Cascading windows

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Overview

From the ABP Report Management System desktop, you can access all aspects of the ABP reports; you can perform all the basic Windows functions to set up, review, edit, and print ABP reports; and you can initialize and read the ABP monitor. Refer to your Microsoft Windows documentation for instructions on basic Windows functions, such as cutting, copying, pasting, and deleting. The ABP Report Management System menu options are described in the sections that follow.

File Menu

The **File** menu contains commands to open, close, save, print, copy, delete, import, and export scans, as described in more detail below.

Open

To access an ABP scan, select **Open** on the **File** menu (or click the **Open** icon on the toolbar) to display the **Open Scan** dialog box (refer to *Figure 2-1* on page 2-2).

When you select a patient from the list of available scans, the **Patient Information** dialog box automatically opens (refer to *Review Menu* on page 2-7).

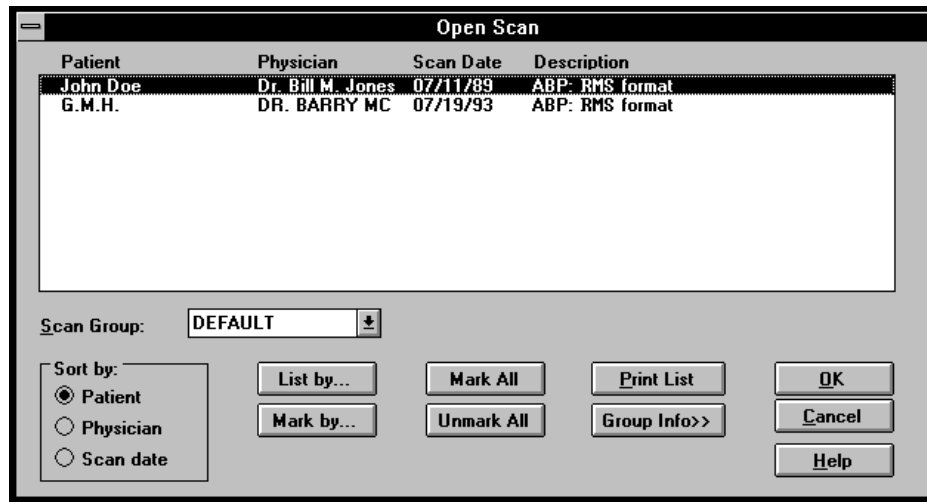


Figure 2-1: Open Scan dialog box

Selecting a Scan

The Open Scan dialog box provides various options for sorting and locating the desired scan(s). Select the desired scan group from the **Scan Group** drop-down list. A scan group is a set of scans that has been grouped together for a specific reason, such as scans originating from the same scanning service or physician.

The information displayed in the **Description** column depends on the type of scan listed. Click the **Group Info** button to display information about the selected scan group (for example, the total number of scans in the group). Click this button again to close the information.

Select a **Sort by** option to sort the list by patient name, physician name, or scan date.

Click **List by** to limit the list to only those scans that you need to view. You can search for a particular date or date range or for a particular patient or physician name. To search for a particular date, enter a start date and an end date in the indicated edit boxes. Only those scans whose dates fall within the specified date range will be listed. To search for a particular name, type the name of the patient or physician in the appropriate fields. To list all those names beginning with a particular letter, type the letter and the “wild card” asterisk character (*).

For example, if you type **A*** in the PATIENT field and click **OK**, scans of all those patients whose names begin with the letter **A** are listed. Similarly, if you type **Dr. B*** in the PHYSICIAN field, you might see Dr. Bill M. Jones and Dr. BARRY MC in the **Physician** column as illustrated in *Figure 2-1: Open Scan dialog box*. (Case is ignored when you select the **Ignore Case** check box.)

Click **Mark by** to choose scans for opening or printing based on the same criteria previously described for the **List by** button.

Click **Mark All** to select (mark) the entire list of scans to open or print.

Click **Unmark All** to deselect or unmark the list.

Click **Print List** to print the entire list using the currently selected printer.

Close

Select **Close** on the **File** menu (or click the **Close** icon on the toolbar) to close all review windows for the current scan and remove the current scan from the status bar at the bottom of the desktop. If changes were made to the scan data, select **Yes** or **No** to the prompt to keep or discard the changes.

Save

Select **Save** on the **File** menu (or click the **Save** icon on the toolbar) to save editing changes for the currently active scan. All changes are now permanent. To recover the original information, the scan must be re-imported.

Print

Select **Print** on the **File** menu (or click the **Print** icon on the toolbar) to display the **Report Components** dialog box for configuring the printed report.

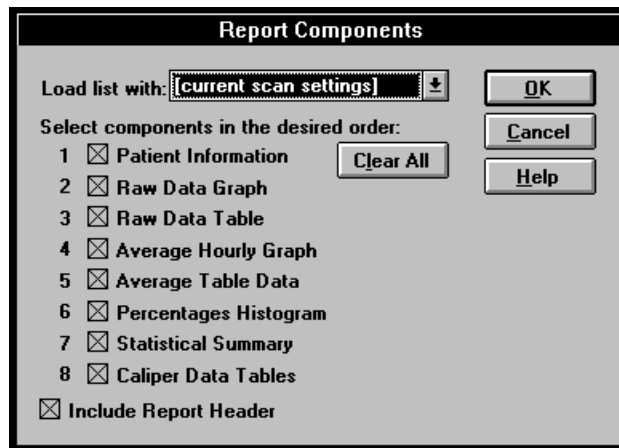


Figure 2-2: Report Components dialog box

The ABP scan components are printed in the order in which they are selected, shown by the numbers to the left of the check boxes. The drop-down list box enables you to select previously saved report configurations.

After the report components are selected and the preferences are set, click **OK** to display the **Print** dialog box. Click **OK** to begin printing.

Printer Setup

Select **Print setup** on the **File** menu to change printing options. The **Print** dialog box appears for you to select and set up the printer (or fax) for the report to be printed.

Copy Scan

Select **Copy Scan** on the **File** menu to copy scans between the **Import**, **Work**, and **Export** directories on the same device or different devices (i.e., hard drive, disk, network drive, optical drive). The **Copy Scan** dialog box allows scans to be copied from one scan group to another. A source scan group is selected using the **From Group** list. A destination scan group is selected using the **To Group** list. A list of scans in the selected group is displayed by choosing the desired option.

If the **Import** directory is selected, the scans that can be imported from the FT-ABP/PCI systems are displayed. If the **Work** directory is selected, the scans already in the Report Management System format are listed. If the **Export** directory is selected, scans that have been exported from the application back to ABP format are displayed.

Use the **List by** and **Mark by** buttons to filter the scans in the current directory for display and marking, respectively, as described previously (refer to *Open* on page 2-1).

Delete Scan

Click **Delete scan** on the **File** menu to open the **Delete Scan** dialog box, enabling you to delete scan from the storage media. The controls for **Delete scan** work the same as the **Open Scans** dialog box described earlier.

Import

Click **Import** on the **File** menu to open the **Import ABP Scan** dialog box to display those scans in the Import directory for the current scan group.

The **Import** option converts ABP scans transferred from an FT-ABP or PCI system to a format that can be used for the Report Management System. The import process involves uncompressing and unpacking (if necessary) the selected scan, converting it to the Report Management System format, and saving it in the Work directory (as determined by the selected scan group). The source scan can be deleted after import (an option in the **Setup Scan Groups** dialog box).

If the scan does not contain a valid Social Security Number or a patient identification number, the **Enter Identification Number** dialog box appears, enabling you to enter a unique identifier for that scan.

Export

To convert an ABP scan to FT-ABP, PCI, or ASCII format, select **Export** from the **File** menu to open the **Export ABP Scan** dialog box. You can then select those scans in the Work directory you wish to export.

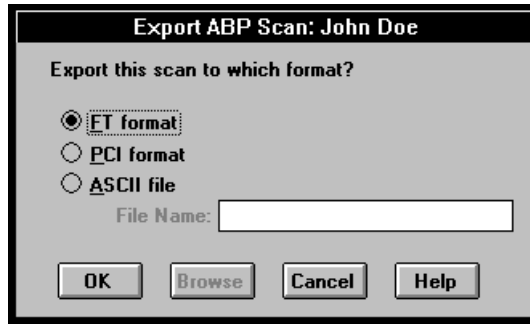


Figure 2-3: Export ABP Scan dialog box

If either PCI or ASCII format is chosen, a file name must be entered. When exporting ABP scans, the source scan may be deleted after export (refer to *Setup Menu* on page 2-20).

Exit

Select **Exit** from the **File** menu to end the session and close the ABP Report Management program. If the scan data have been modified, select **Yes** to make the changes permanent.

Edit Menu

The **Edit** menu contains the basic Windows commands for cutting, copying, and pasting text and graphics to and from the clipboard, as well as marking and modifying specific data items and groups of items in a review.

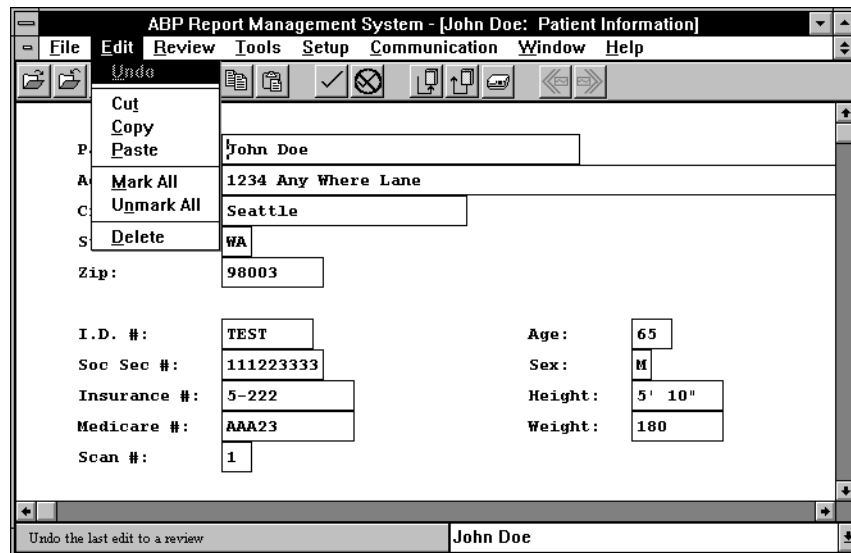


Figure 2-4: Edit menu

Undo

Select **Undo** from the **Edit** menu to reverse the last change to data in a text box; however, **Undo** only works if the cursor is still in the changed text box.

Cut

To move text or graphics from one location to another, select the desired information and then select **Cut** on the **Edit** menu (or click the **Cut** icon on the toolbar). This permanently removes the data from the work area and places it onto the clipboard. Once the selected text has been cut to the clipboard, it can be pasted to another location in this application or into another application. Only editable text and graphics can be cut to the clipboard. If you do not intend to paste this data elsewhere, simply press the DEL key on the keyboard to permanently remove it, or select **Delete** on the **Edit** menu.

Copy

To copy information from one location to another, select the editable text or graphics and then select **Copy** on the **Edit** menu (or click the **Copy** icon on the toolbar). This places the data on the clipboard without removing it from the work area. Once the selected text has been copied to the clipboard, it can be pasted to another location in this application or into another application. Refer to *Review Menu* on page 2-7 for details on copying data from each review.

Paste

To insert text or graphics that have been placed on the clipboard, place the cursor at the point where you wish to insert the information, and then select **Paste** on the **Edit** menu (or click the **Paste** icon on the toolbar).

Mark All

Select **Mark All** on the **Edit** menu (or click the **Mark All** icon on the toolbar) to select (highlight) all field prompts and data in the open window in order to cut or copy the information to the clipboard. Refer to the *Review Menu* on page 2-7 for more information on marking items in each review.

Unmark All

If the entire contents of a review are selected (highlighted) using **Mark All**, the selected data can be unmarked by selecting **Unmark All** on the **Edit** menu (or click the **Unmark All** icon on the toolbar).

Delete

To permanently remove selected (marked) data, select **Delete** on the **Edit** menu (or click the **Delete** icon on the toolbar). You can also perform the same function by pressing the DEL key on the keyboard.

Review Menu

The **Review** menu options display different components of the selected scan as a table, graph, or fixed field. Several reviews can simultaneously be opened and positioned on the desktop using the **Window** menu commands. **Review** menu commands that are not available for a particular scan appear dimmed.

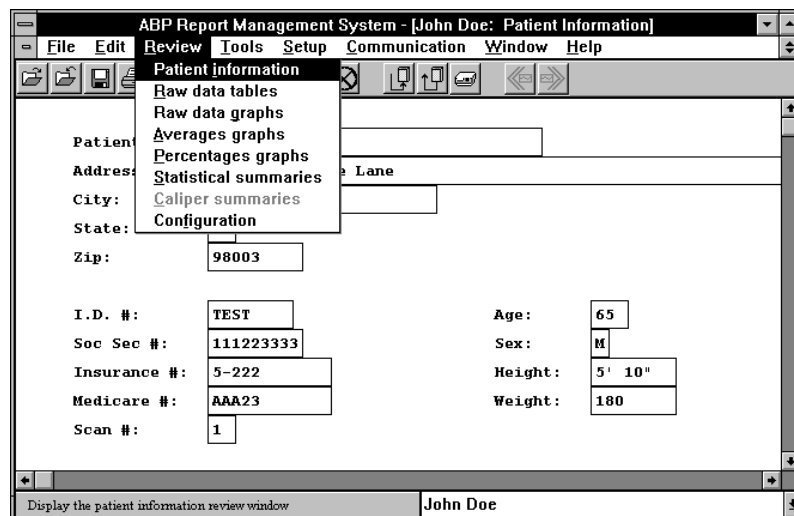


Figure 2-5: Review menu

Each review window has a unique set of commands on the **Tools** menu that are used with that particular review. **Print Review** is the only command that is common to all reviews.

Most review windows display scroll bars along the bottom and the right side to allow information to be viewed that does not fit on the screen. To view the maximum amount of information for any window, click the maximize button in the upper-right corner of the review window. Refer to the following sections for further details on **Review** menu commands.

Patient Information

Select **Patient information** on the **Review** menu to display the patient, physician, and medication information contained in the selected scan (refer to *Figure 2-6*). The **Patient Information** review opens automatically when a scan is selected. The **Tools** menu commands available for this review are **Print Review** and **Update**.

Figure 2-6: Patient Information review

The **Patient Information** review uses a fixed field layout to present the patient information. Descriptive prompt fields indicate the type of information contained in the text boxes, which contain the information previously saved for this scan.

Editing

Information in any of the text boxes can be revised by clicking the desired text box and editing the text. Select **Save** on the **File** menu (or click the **Save** icon on the toolbar) to make the changes permanent. If data is changed, the other reviews will respond to any changes by selecting **Update** on the **Tools** menu.

Printing

To print a review, use one of the following methods:

- Select **Print Review** on the **Tools** menu.
- Select **Print** on the **File** menu.
- Click the **Print** icon on the toolbar.

The **Print** dialog box appears, enabling you to change the printer setup. Click **OK** to begin printing.

Marking

A single piece of information can be marked by holding down the SHIFT key and clicking the descriptive prompt field associated with the desired text box. This marks both the prompt field and the text box. Select **Mark All** on the **Edit** menu (or click the **Mark All** icon on the toolbar) to select all the information on the review.

Copying

To place the information onto the clipboard, select the desired text or graphics and then select **Copy** on the **Edit** menu (or click the **Copy** icon on the toolbar).

Raw Data Tables

Select **Raw data tables** on the **Review** menu to display raw data from ABP readings in a table format (refer to *Figure 2-7*). The **Tools** menu commands available for this review are **Print Review** and **Update**.

Reading	Day & Time	Systolic	Diastolic	MAP	Heart Rate	Event Code	Edit Status	Diary Activity
1	1-09:12	0	0	0	0	21	EE	
2 R	1-09:14	0	0	0	0	21	EE	
3	1-09:42	183	96	127	80			
4	1-10:12	0	0	0	0	30	EE	
5 R	1-10:15	180	90	112	83			
6	1-10:42	180	97	108	83			
7	1-11:12	187	103	115	80			
8	1-11:42	156	< 113 >	120	83			
9	1-12:12	180	94	106	77			
10	1-12:42	199	96	123	81			
11	1-13:12	192	96	110	85			
12	1-13:42	194	100	110	84			

Figure 2-7: Raw Data table review

Each row in the raw data table displays a reading with the corresponding number in the left column of the table. The reading number may display an additional indicator (**M** indicates a manually initiated reading and **R** indicates an automatic retry after an unsuccessful reading). The columns contain the various components of the reading.

The **Edit Status** column displays the type of edit for each reading:

- **EE** signifies an event edit, which comes from the ABP monitor.
- **AE** signifies an automatic edit, which has configurable limits set via the **Statistics** command on the **Setup** menu.
- **ME** signifies a manual edit by a system operator (refer to *Edit Menu* on page 2-6 for details).

Angle brackets "< >" as illustrated on line 8 of *Figure 2-7* on page 2-9 (<113>) signify an estimated reading.

Editing

A cell in the **Edit Status** column can be edited if it does not already display an **EE** or an **AE** status. To edit a cell, click in the desired cell in the **Edit Status** column. The **ME** edit status is displayed. This edit status can be reversed by clicking in the cell again and the **ME** edit status will be removed. Select **Save** on the **File** menu (or click the **Save** icon) to make the change permanent. If the edit status of a reading changes, the other ABP reviews will respond to this change when you select **Update** from the **Tools** menu.

A cell in the **Diary Activity** column can also be edited. To add or revise a diary activity, click in the desired cell, type the diary activity, and select **Save** on the **File** menu (or click the **Save** icon on the toolbar). To use an existing diary activity item (refer to *Configuration* on page 2-17 for details), select a diary activity item from the drop-down list in the selected cell.

Printing

To print the table, use one of the following methods:

- Select **Print Review** on the **Tools** menu.
- Select **Print** on the **File** menu.
- Click the **Print** icon on the toolbar.

The **Print** dialog box appears, enabling you to change the printer setup. Click **OK** to begin printing.

Marking

Select (mark) an entire row by holding down the SHIFT key and clicking the desired reading number in the left column. Select (mark) an entire column by holding down the SHIFT key and clicking the desired column heading. Perform the same action on a marked row or column to unmark it. You can also select **Mark All** or **Unmark All** from the **Edit** menu (or click the **Mark All** or **Unmark All** icon on the toolbar) to perform the same tasks.

Copying

Select (mark) the desired text or graphics, and then select **Copy** from the **Edit** menu (or click the **Copy** icon on the toolbar) to place the data onto the clipboard.

Raw Data Graphs

Select **Raw data graphs** on the **Review** menu to display raw data from ABP readings as a graph in the upper portion of the window and as a table in the lower portion of the window (refer to *Figure 2-8*). The **Tools** menu commands available for this review are **Print Review**, **Update**, **Save Caliper Settings**, and **Resolution**.

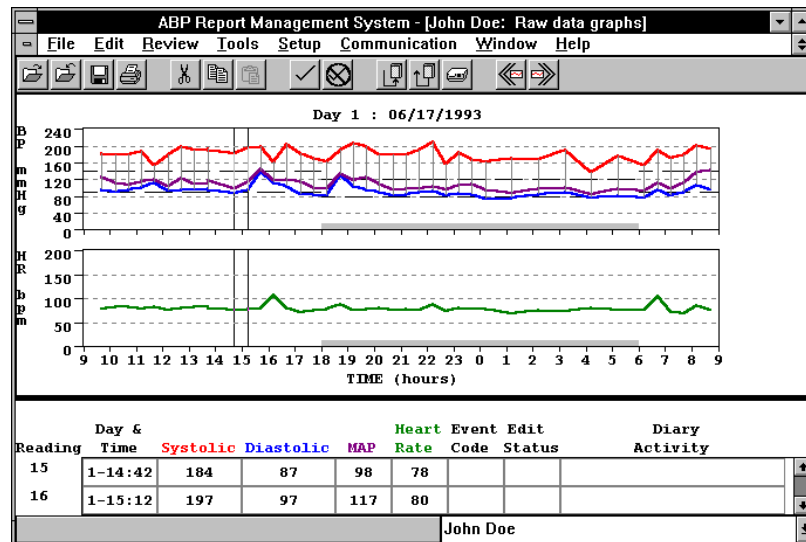


Figure 2-8: Raw data graphs review

The graph portion of this review displays all non-edited readings as two line graphs:

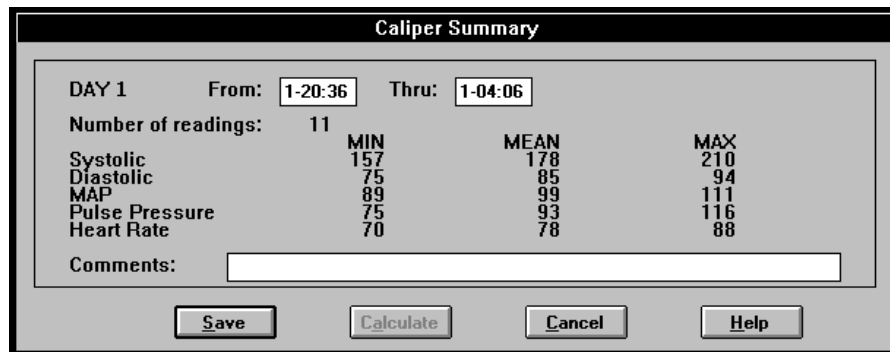
- The top graph displays the systole, MAP, and diastole (the systole is the upper value, the MAP is in the middle, and the diastole is the lower value).
- The bottom graph displays the heart rate.

The table portion of this review displays the raw data table as described under *Raw Data Tables* on page 2-9.

The information displayed between the pair of vertical lines on the graphs corresponds to the currently displayed table data. As the table is scrolled, the lines move across the graph. The graph portion of the window can be made larger or smaller to show more or less of the table data. To change the size of a graph, click the black line below the graph, drag the line to the desired position, and release the mouse button.

Save Caliper Settings

An area of the graph can be selected for a caliper summary by placing calipers on the graph and then selecting **Save Caliper Settings** on the **Tools** menu. To place calipers on the graph, click the desired starting location, drag the caliper to the desired ending location, and release the mouse button. The pixels in the selected region become inverted. Select **Save Caliper Settings** to open the **Caliper Summary** dialog box.



The **Caliper Summary** dialog box displays summary information for the selected caliper region. It includes fields for **DAY 1**, **From** time (1-20:36), and **Thru** time (1-04:06). It also shows the **Number of readings** (11) and a table of vital signs.

	MIN	MEAN	MAX
Systolic	157	178	210
Diastolic	75	85	94
MAP	89	99	111
Pulse Pressure	75	93	116
Heart Rate	70	78	88

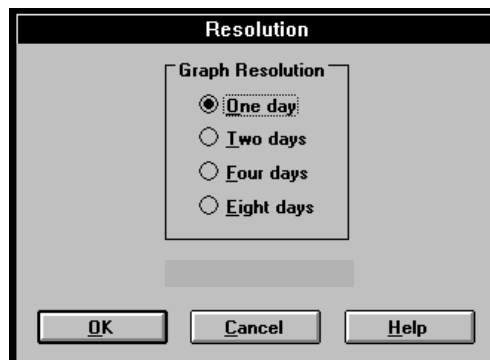
There is also a **Comments** text box and buttons for **Save**, **Calculate**, **Cancel**, and **Help**.

Figure 2-9: Caliper Summary dialog box

This dialog box displays summary information for the selected caliper region. The **From** and **Thru** times can be edited, and a comment can be entered in the **Comments** text box if desired. If these items are altered, click **Calculate** and then click **Save**. The saved caliper summary can be viewed by selecting **Caliper summaries** on the **Review** menu (refer to *Caliper Summaries* on page 2-16). To edit, print, mark, or copy, refer to those sections under *Raw Data Tables* on page 2-9.

Resolution

The Resolution feature enables you to view up to eight days of data on each graph. Select **Resolution** from the **Tools** menu to display the **Resolution** dialog box.



The **Resolution** dialog box allows you to select the **Graph Resolution**. The options are:

- ☒ One day
- ☐ Two days
- ☐ Four days
- ☐ Eight days

Buttons for **OK**, **Cancel**, and **Help** are at the bottom.

Figure 2-10: Resolution dialog box

Select an option under **Graph Resolution** to configure the graphs to contain one, two, four, or eight days of data on each graph. For example, if you select **Two days**, a scan containing six days of data will be displayed and printed on three separate graphs, each one displaying two days of data.

Scrolling the Graphs

Click the left or right **Graph Scroll** icon on the toolbar to scroll the graph left or right (these icons are only available for raw data graphs and averages graphs).

Note:

Changing the resolution settings for a scan will also change the configuration of the raw data graphs and the hourly averages graphs.

Averages Graphs

Select **Averages graphs** from the **Review** menu to display averaged ABP readings as a graph in the upper portion of the window and as a table in the lower portion of the window. All non-edited readings are used to calculate the displayed averages.

The **Tools** menu commands available for this review are **Print Review** and **Resolution** (refer to *Resolution* on page 2-12). Averages graphs cannot be edited.

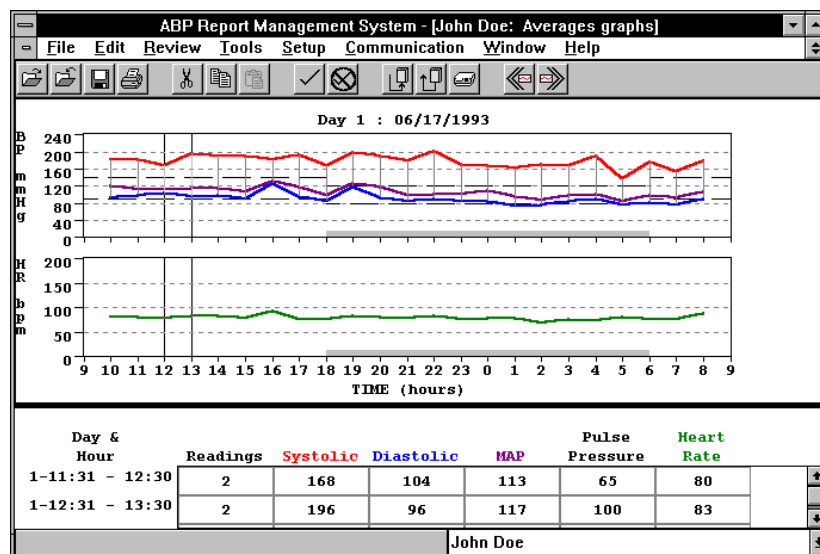


Figure 2-11: Averages graphs review

The graphical portion of this review displays two line graphs:

- The top graph displays the systolic average, MAP average, and diastolic average.
- The bottom graph displays the heart rate average.

The table portion of this review displays the hourly averages. Use the vertical scroll bar to view more of the table.

Refer to *Raw Data Graphs* on page 2-11 for more information about working with graphs.

Percentages Graphs

Select **Percentages graphs** from the **Review** menu to display raw data from ABP readings as percentage histograms in the upper portion of the window and as a table in the lower portion of the window. These graphs cannot be edited, and the only **Tools** menu command available for this review is **Print Review**.

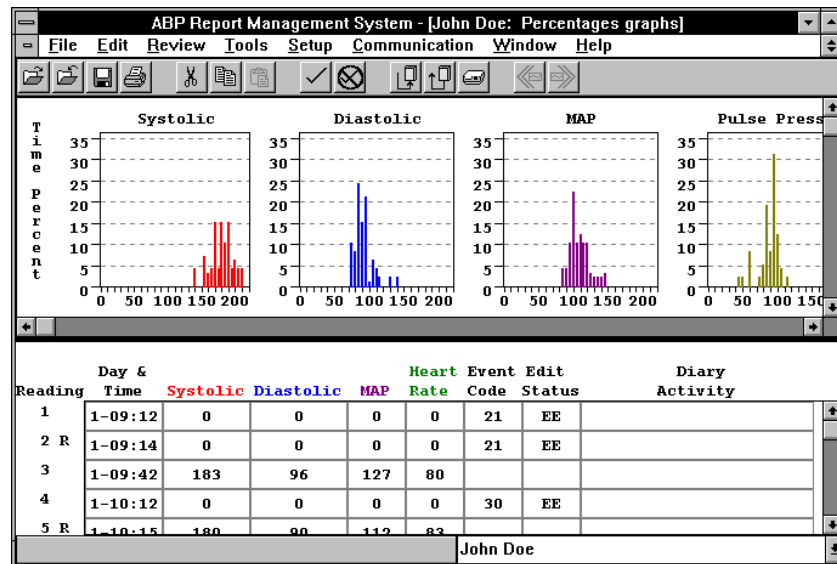


Figure 2-12: Percentages graphs review

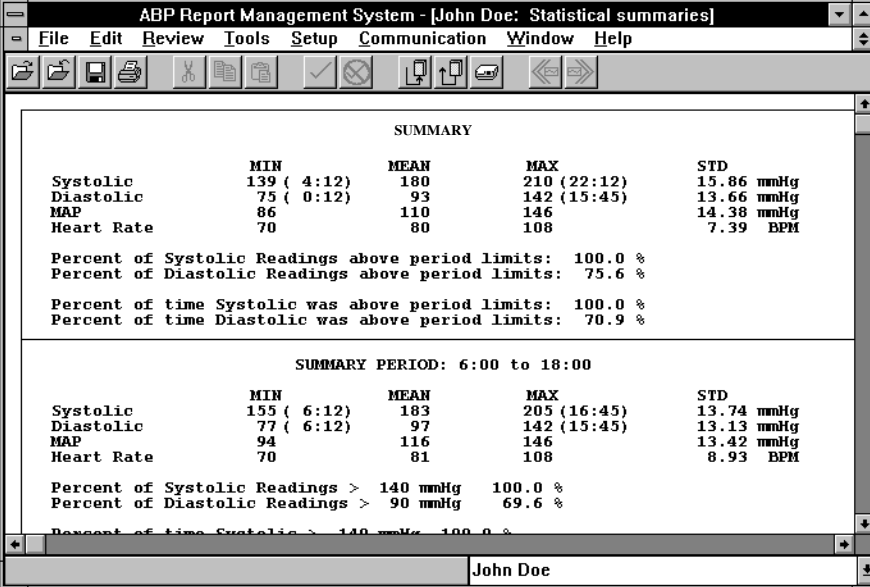
The graph portion of this review displays four percentage histograms:

- Systolic
- Diastolic
- MAP
- Pulse Pressure

All non-edited readings are used in the histograms. Refer to *Raw Data Graphs* on page 2-11 for more information about working with graphs.

Statistical Summaries

Select **Statistical summaries** from the **Review** menu to display a summary of the entire scan and a summary for each of the statistical periods. The only **Tools** menu command available for this review is **Print Review**.



SUMMARY				
	MIN	MEAN	MAX	STD
Systolic	139 (4:12)	180	210 (22:12)	15.86 mmHg
Diastolic	75 (0:12)	93	142 (15:45)	13.66 mmHg
MAP	86	110	146	14.38 mmHg
Heart Rate	70	80	108	7.39 BPM
Percent of Systolic Readings above period limits: 100.0 %				
Percent of Diastolic Readings above period limits: 75.6 %				
Percent of time Systolic was above period limits: 100.0 %				
Percent of time Diastolic was above period limits: 70.9 %				
SUMMARY PERIOD: 6:00 to 18:00				
	MIN	MEAN	MAX	STD
Systolic	155 (6:12)	183	205 (16:45)	13.74 mmHg
Diastolic	77 (6:12)	97	142 (15:45)	13.13 mmHg
MAP	94	116	146	13.42 mmHg
Heart Rate	70	81	108	8.93 BPM
Percent of Systolic Readings > 140 mmHg: 100.0 %				
Percent of Diastolic Readings > 90 mmHg: 69.6 %				
Percent of time Systolic > 140 mmHg: 100.0 %				

Figure 2-13: Statistical summaries review

Statistical summaries include the patient's systolic, diastolic, MAP, and heart rate display. The low, high, and mean rates for the prescribed periods are recorded. The percentage of time in each period that the readings were higher than the statistical boundaries is also displayed.

Caliper Summaries

Select **Caliper summaries** from the **Review** menu to display all caliper summaries previously saved on the **Raw data graphs** review (refer to *Raw Data Graphs* on page 2-11 for information on saving caliper summaries). The **Tools** menu commands available for this review are **Print Review** and **Clear Caliper Summaries**.

ABP Report Management System - [John Doe: Caliper summaries]				
File Edit Review Tools Setup Communication Window Help				
DAY 1 From: 15:30 Thru: 19:24				
Number of readings: 8				
	MIN	MEAN	MAX	
Systolic	163	186	209	
Diastolic	81	107	142	
MAP	98	120	146	
Pulse Pressure	52	80	104	
Heart Rate	72	84	108	
Comments:				
DAY 1 From: 00:30 Thru: 04:36				
Number of readings: 4				
	MIN	MEAN	MAX	
Systolic	139	168	191	
Diastolic	77	83	90	
MAP	86	94	103	
Pulse Pressure	62	85	101	
Heart Rate	70	76	82	
Comments:				
				John Doe

Figure 2-14: Caliper Summaries review

Caliper summaries are displayed in the order in which they were saved. Each summary displays the time period, the number of readings (non-edited) for that time period, the minimum, maximum, and mean Systolic, Diastolic, MAP, Pulse Pressure, and Heart Rate values for that time period, and any comments entered when the summary was saved. Caliper summaries can be removed by selecting **Clear Caliper Summaries** from the **Tools** menu.

Configuration

Select **Configuration** from the **Review** menu to display the Provider, Statistics, Report, and Diary configurations for the selected ABP scan. The **Tools** menu commands available for this review are **Print Review**, **Change Providers**, **Change Diary Entries**, **Change Report Components**, **Change Statistics**, and **Update**.

ABP Report Management System - [John Doe: Configuration]			
File Edit Review Tools Setup Communication Window Help			
Provider		Report	
Name:	Dr. Jones		Include Header: <input checked="" type="checkbox"/>
Address:	4444 E Main St		Report Order:
City:			Patient Information
State:	Zip:	777-3232	Raw Data Graph
Country:			Raw Data Table
Phone:			Average Hourly Graph
			Average Table Data
			Percentages Histogram
			Statistical Summary
			Caliper Data Tables
Statistics			
Edit limits:			
Max Sys	240	Min Sys	70
Max Dias	150	Min Dias	40
		Diary	
John Doe			

Figure 2-15: Configuration review

This review uses fixed fields to present the configuration information. Descriptive prompt fields indicate the type of information contained in the data fields. Refer to *Patient Information* on page 2-8 for information about printing, cutting, copying, and marking.

Each configuration section can be edited by clicking anywhere in that section or by selecting the **Tools** menu command that corresponds to the section. The appropriate dialog box opens, enabling you to revise the information. If data is changed, the other reviews will respond to the changes when **Update** is selected from the **Tools** menu.

Change Providers

Click in the **Provider** section or select **Change Providers** on the **Tools** menu to display the **Providers** dialog box. The **Load list with** drop-down list displays the available provider configurations. **Current scan settings** is the default item in the list. Edit the care provider information as desired, and then click **OK**.

Change Diary Entries

Click in the **Diary** section or select **Change Diary Entries** from the **Tools** menu to display the **Diary Entries** dialog box. The **Load list with** drop-down list displays the available diary entry configurations. **Current scan settings** is the default item in the list.

To edit an existing diary item, select an item from the list to display it in the **Diary Item** edit box. Edit the displayed item and click **Change**.

To delete the selected item, click **Remove**.

To add a new item, enter the desired item in the edit box and click **Add**.

Click **OK** to update the selected diary entry configuration. Select **Save** from the **File** menu to make the changes permanent.

Change Report Components

Click in the **Report** section or select **Change Report Components** from the **Tools** menu to display the **Report Components** dialog box. The **Load list with** drop-down list displays the available report configurations. **Current scan settings** is the default item in the list. A check box for each report component is displayed, and each check box may be selected (checked) or unselected. A number that corresponds to the printing order displays next to each selected component. To clear all selections and set the printing order, click **Clear All**. Select the **Include Report Header** check box to print the report header at the top of each report page. Click **OK** to update the selected report configuration. Select **Save** from the **File** menu to make the changes permanent.

Change Statistics

Click in the **Statistics** section or select **Change Statistics** from the **Tools** menu to display the **Statistics** dialog box (refer to *Figure 2-16*). The **Load list with** drop-down list displays the available statistics configurations. **Current scan settings** is the default item in the list.

The data under **Auto edit limits for data analysis** can be edited. The statistical periods can also be changed or deleted and new periods can be added.

To change an existing period, select a period from the box to display its parameters in the edit boxes above the list. Edit the displayed period information and click **Change**.

To delete the selected period, click **Remove**.

To add a new period, enter the period information in the edit boxes and click **Add**.

Click **OK** to update the statistics configuration. Select **Save** from the **File** menu to make the changes permanent.

The **Statistics** dialog box contains the following elements:

- Load list with:** A drop-down menu showing **[current scan settings]**.
- Auto edit limits for data analysis:** A table with columns for Systolic, Diastolic, MAP, PP, and Rate, with rows for Max and Min values.
- Periods:** A table with columns for Period, Starting Time, Ending Time, Systolic, and Diastolic, showing two existing periods.
- Buttons:** OK, Cancel, Help, Add, Remove, and Change.

Auto edit limits for data analysis					
	Systolic	Diastolic	MAP	PP	Rate
Max	240	150	200	150	200
Min	70	40	40	20	20

Period	Starting Time	Ending Time	Systolic	Diastolic
1	6	18	140	90
2	18	6	120	80

Figure 2-16: Statistics dialog box

Tools Menu

The **Tools** menu commands are specific to the currently active review and change as the active review type changes. For a description of the various **Tools** menu commands, refer to the appropriate section under *Review Menu* on page 2-7.

Setup Menu

Setup menu commands configure the Report Management System parameters and initialize data parameters. You can perform setup functions for: Groups, Monitors, Diary Entries, Physicians, Communications, Statistics, and Report Sequence.

Groups

Select **Groups** on the **Setup** menu to display the **Setup Scan Groups** dialog box (refer to *Figure 2-17*). A scan group is a method of grouping scans together for a particular purpose in a particular place (for example, scans from a particular hospital can all be stored in the same place on a particular storage device).

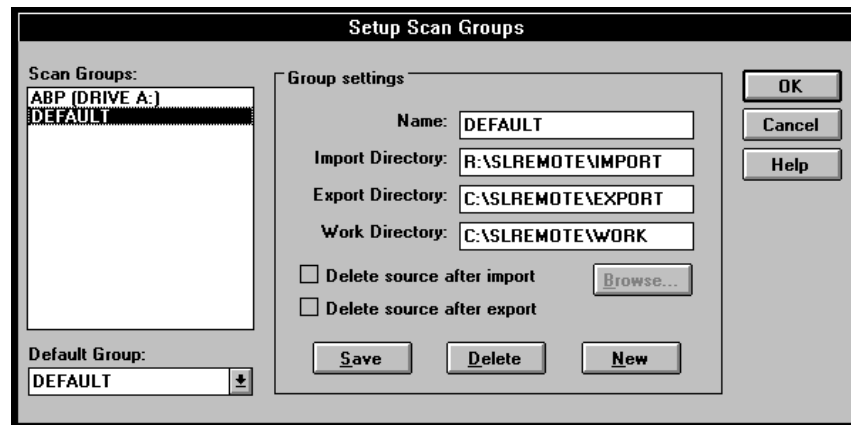


Figure 2-17: Setup Scan Groups dialog box

The three main components that affect a scan location are:

- **Import Directory** — the drive and directory where ABP scans in FT or PCI format (ready to be imported) are stored.
- **Export Directory** — the drive and directory where ABP scans in FT, PCI, or ASCII format (previously exported) are stored.
- **Work Directory** — the drive and directory where ABP scans that are ready to be opened are stored.

The **Scan Groups** list on the left displays all existing scan groups.

To pick a default scan group to be used, for example, on the **Open Scan** dialog box, select a group from **Default Group** drop-down list.

The **Group settings** section displays information for the currently selected scan group.

To change an existing scan group, select a group from the **Scan Groups** list to display its components in the **Group settings** section. Edit the displayed components and click **Save**. To edit a directory path, you can manually type it, or you can select the directory field and click **Browse** to locate the desired path.

To delete the selected group, click **Delete**.

To add a new scan group, click **New**, enter the desired information in the **Group settings** area, and then click **Save**. If a directory path does not exist, you are prompted to create the directory. After all scan groups are added or modified, click **OK** to make the changes permanent.

Select the **Delete Source After Import** check box to delete the source scan from the **Import** directory after an import.

Select the **Delete Source After Export** check box to delete the source scan from the **Work** directory after an export.

Monitors

Select **Monitors** on the **Setup** menu to display the **Monitor Initialization Settings** dialog box used to initialize an ABP monitor.

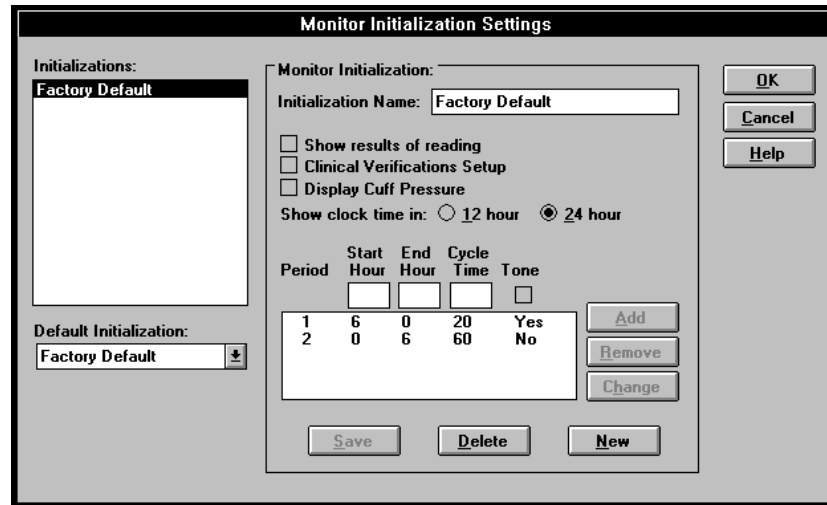


Figure 2-18: Monitor Initialization Settings dialog box

The **Monitor Initialization Settings** dialog box is similar to the **Setup Scan Groups** dialog box. The **Initializations** list on the left displays all existing monitor initialization configurations.

Select the default settings for initializing a monitor from the **Default Initialization** drop-down list.

The **Monitor Initialization** section displays the currently selected initialization configuration information that can be edited, deleted, or added.

The following check box options are available:

- **Show results of reading** — the reading results will appear on the monitor display after the reading is completed. Refer to the *90207/90217 ABP Operations Manual (P/N 070-0137-xx)* for more information.
- **Clinical Verifications Setup** — the monitor will always look for pressures as low as 40 mmHg (the monitor will always bleed to 40 mmHg). Refer to the *90207/90217 ABP Operations Manual (P/N 070-0137-xx)* for more information.
- **Display Cuff Pressure** — the cuff pressure will appear on the monitor display during the pumping and bleeding part of the reading. Refer to the *90207/90217 ABP Operations Manual (P/N 070-0137-xx)* for more information.

You can show the clock time in either a 12-hour or 24-hour format on the monitor display.

Monitor initialization intervals can also be changed, deleted, or added. As many as 12 periods can be created and displayed in the list box.

- **Start Hour/End Hour** — Enter a number between 0 and 23 in these boxes.

The starting hour of each period must be the same as the ending hour of the previous period (except for the first period in the list).

The ending hour of each period must be the same as the starting hour of the next period (except for the last period in the list).

- **Cycle Time** — The cycle time sets the number of minutes that the monitor will wait between readings. Earlier monitor versions require a value between 6 and 60. Newer versions of the monitor require a value between 6 and 120, or two dashes (the dashes instruct the newer monitors to take no readings within this period).
- **Tone** — Select this check box to produce a tone when a reading is about to be taken.

To edit an existing period, select the appropriate row from the list, revise the information in the edit boxes, and click **Change**.

To delete the selected period, click **Remove**.

To add a new period, enter the information in the edit boxes and click **Add**.

Diary Entries

Select **Diary Entries** on the **Setup** menu to display a dialog box similar to the **Diary Entries** dialog box in the ABP Configuration review (refer to *Change Diary Entries* on page 2-18). In addition, a default configuration can be selected using the **Default Diary** drop-down list.

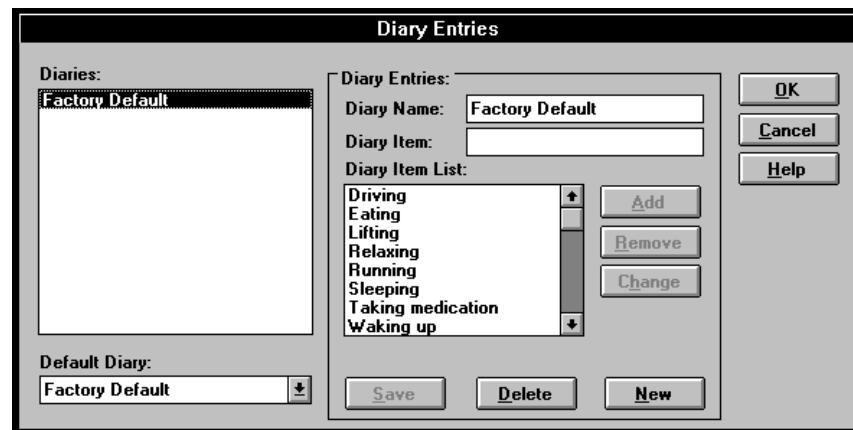
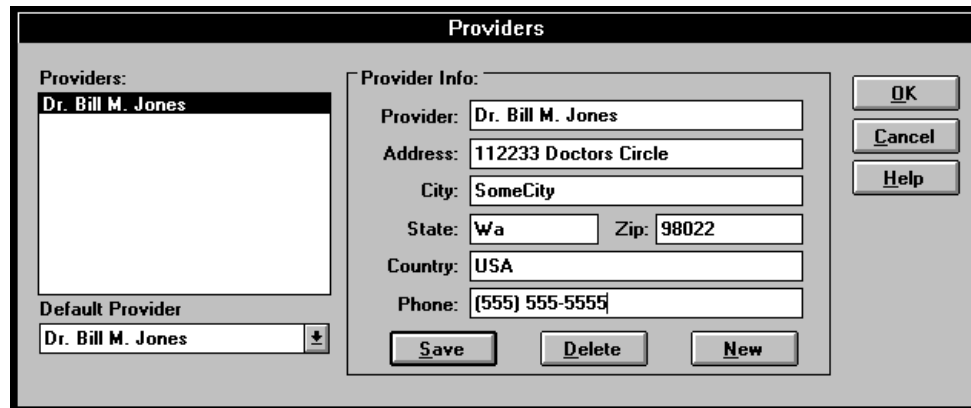


Figure 2-19: Diary Entries dialog box

Physicians

Select **Physicians** on the **Setup** menu to display the **Providers** dialog box. A default provider can be selected using the **Default Provider** drop-down list (refer to *Change Providers* on page 2-17 for more details).



The **Providers** dialog box contains a list of providers on the left, with **Dr. Bill M. Jones** selected. Below the list is a **Default Provider** drop-down menu, also showing **Dr. Bill M. Jones**. To the right, the **Provider Info:** section includes text boxes for **Provider**, **Address**, **City**, **State**, **Zip**, **Country**, and **Phone**. The **Save**, **Delete**, and **New** buttons are at the bottom. On the far right are **OK**, **Cancel**, and **Help** buttons.

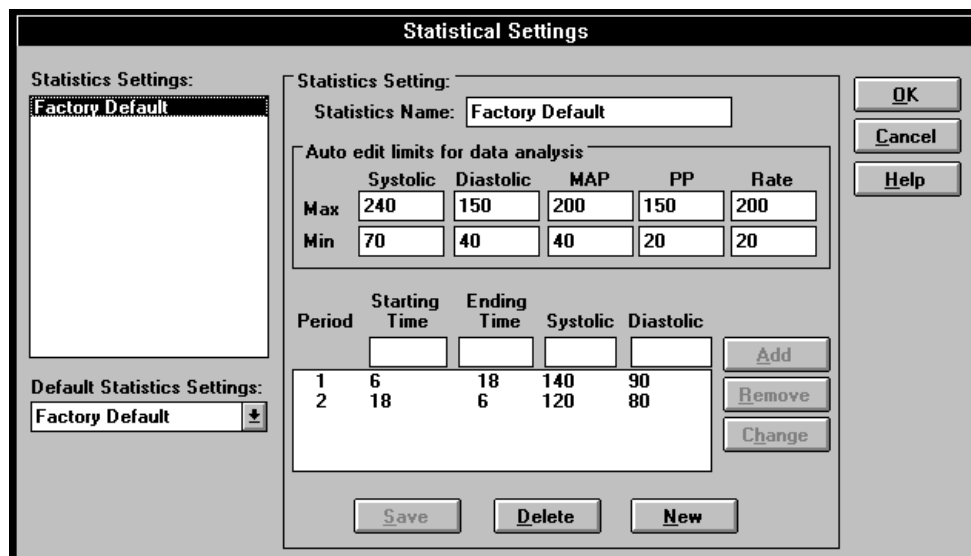
Figure 2-20: Providers dialog box

Communications

Select **Communications** on the **Setup** menu to view and edit passwords and ports used for ABP card reader and monitor communications.

Statistics

Select **Statistics** on the **Setup** menu to display the **Statistical Settings** dialog box (refer to *Change Statistics* on page 2-19 for more details).



The **Statistical Settings** dialog box features a list of statistics settings on the left, with **Factory Default** selected. Below the list is a **Default Statistics Settings:** drop-down menu, also showing **Factory Default**. The main area is titled **Statistics Setting:** and includes a **Statistics Name** text box. Below this is a table for **Auto edit limits for data analysis**:

	Systolic	Diastolic	MAP	PP	Rate
Max	240	150	200	150	200
Min	70	40	40	20	20

Below the table is a table for **Period** settings:

Period	Starting Time	Ending Time	Systolic	Diastolic
1	6	18	140	90
2	18	6	120	80

Buttons for **Add**, **Remove**, and **Change** are to the right of the period table. At the bottom are **Save**, **Delete**, and **New** buttons. On the far right are **OK**, **Cancel**, and **Help** buttons.

Figure 2-21: Statistical Settings dialog box

Report Sequence

Select **Report Sequence** on the **Setup** menu to display the **Report Components** dialog box (refer to *Change Report Components* on page 2-18 for more details).

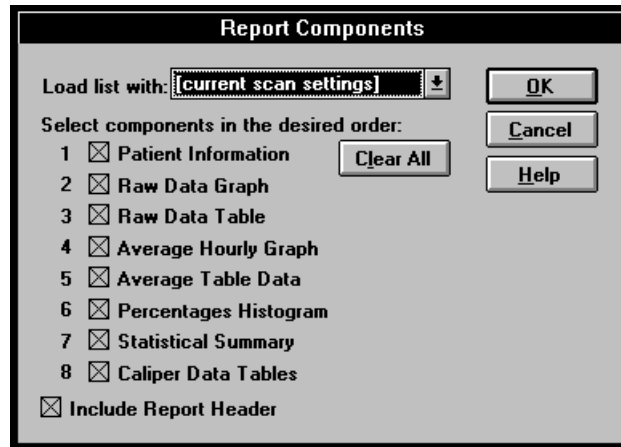


Figure 2-22: Report Components dialog box

Communications Menu

The **Communications** menu is used to initialize or read an ABP monitor or a data card connected to one of the serial ports.

Initialize Monitor

Select **Init Monitor** on the **Communications** menu (or click the **Initialize Monitor** icon on the toolbar) to open a dialog box similar to the one displayed using the **Monitors** command on the **Setup** menu (refer to *Monitors* on page 2-21). In addition to the monitor initialization information, this dialog box contains biographical information, password information, and the current system date and time (described below).

- **Biographical information** — The patient name, patient ID, and any comments can be entered in the **Biographical** section.
- **Password information** — The password is used to unlock the monitor so that the memory in the monitor can be read or altered. The primary password is tried first. If the primary password succeeds, the monitor is unlocked; otherwise, the secondary password is tried. If the secondary password fails, an error message displays. If the secondary password succeeds, then the primary password will replace the secondary password in the monitor. The password corresponds to the one previously entered using the **Communications** command on the **Setup** menu.
- **Initialization Date and Time** — The date and time used for the internal monitor setting can be changed. These values default to the system date and time.
- **Start Initialization** — After all the above information has been entered, click **Start Init**. A dialog box displays enabling you to select direct connection or modem connection. The appropriate instructions are displayed based on the current selection. Click **OK** to start the initialization.

If you clicked **OK**, a thermometer dialog box appears showing the progress of the initialization. When the process is complete, you will see a message that the initialization was successful or unsuccessful.

Read Monitor

Select **Read Monitor** on the **Communications** menu (or click the **Read Monitor** icon on the toolbar) to open a dialog box similar to the one displayed using the **Monitors** command on the **Setup** menu. Follow the instructions for the desired monitor connection and click **OK** when you are ready to read the monitor. When you click **OK**, a thermometer dialog box indicates the progress of the read process.

After the data is read from the monitor, the **Target Scan Group** dialog box appears. Select the desired scan group and click **OK**. If the monitor does not contain a valid patient identification number, you are prompted to enter a unique nine-digit identification number. Click **OK** to continue.

At the end of the read monitor process, the **Patient Information** review will automatically open, and the patient data read from the monitor will display.

Read Card

Select **Read Card** from the **Communications** menu (or click the **Read Card** icon on the toolbar) to display a dialog box similar to the **Read Monitor** dialog box. Follow the instructions and click **OK** when you are ready to read the data card. A thermometer dialog box indicates the progress of the read process.

After the data is read from the card, the **Target Scan Group** dialog box appears. Select the desired scan group and click **OK** to display a list of scans (refer to *Figure 2-23*). Select a scan and click **OK** (or double-click a scan). Scans that have been processed are preceded by an asterisk.

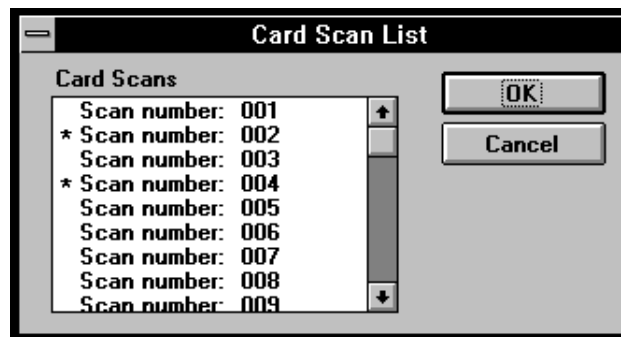


Figure 2-23: Card Scan List dialog box

When a scan is selected for processing, a dialog box allows entry of a patient name and a unique nine-digit identification number. Click **OK** to accept the data. This initiates processing of the scan from the data card. The scan must be opened later to edit the patient information.

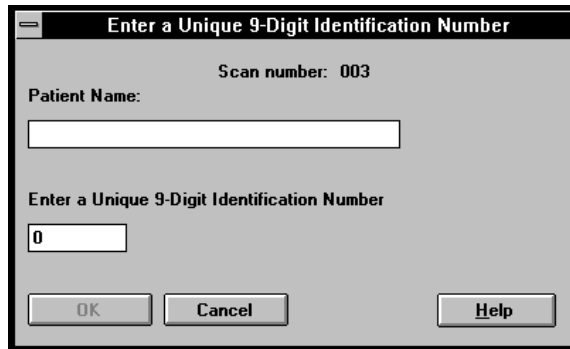


Figure 2-24: Unique 9-digit ID dialog box

Windows Menu

This option enables you to arrange and position multiple review windows for simultaneous viewing. Refer to *Multiple Document Interface (MDI)* on page 1-3 for further information.

Help Menu

Online help is available at any time by selecting either **Help for Help** or **Help Index** from the **Help** menu. In addition, many of the dialog boxes in this application include **Help** buttons that provide information associated with that dialog box.

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Other Features

Online Help System

Online help is available at any time by selecting either **Help for Help** or **Help Index** from the **Help** menu. In addition, many of the application's dialog boxes contain Help buttons that display the Help section associated with that dialog box.

The Help system is similar to most Windows applications. For more information on using the Microsoft Windows Help system, see your Windows owners manual.

Network Capability

The ABP Report Management System provides standard Microsoft Windows supported access to all system storage resources such as floppy and hard drives. If the system is running on a computer that has Windows access to network resources, such as hard disks and printers, it will have access to those capabilities.

Remote Communications

The 90202 and 90207 ABP monitors can be initialized or read directly using a direct connect cable or remotely using a 1200-baud Hayes modem. The 90217 ABP monitor can be initialized or read directly using a direct connect cable or remotely using a 9600-baud (or less) Hayes modem. Refer to the *Setup* chapter in the *90217 Ambulatory Blood Press Monitor Service Manual* (P/N 070-0502-xx, which is located on CD-ROM 084-0201-xx) for more information.

Faxing






















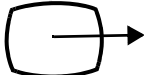


This application, like any other Microsoft Windows application that supports printers, can send its output to an installed fax card that supports a printer-like interface.

After the fax card is installed and connected to a telephone line, its Microsoft Windows driver must be installed (see the card manufacturer's installation instructions). Use the **Printer Setup** dialog box in the **File** menu to select the fax device for output.








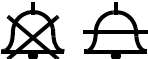
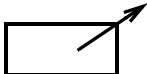
















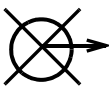
Typically, the fax software displays a dialog box for entering the destination phone number and other information before the output to the fax begins.

Symbols

The following list of international and safety symbols describes all symbols used on Spacelabs Medical products. No one product contains every symbol.

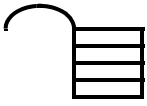
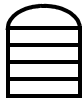










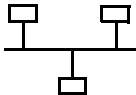

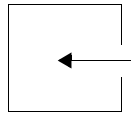
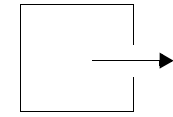





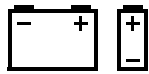


Symbol	Description	Symbol	Description
	HELP Key		Keyboard Connection
	SPECIAL FUNCTIONS Key		Mouse connection
	RECORD Key		START/STOP Key
	NORMAL SCREEN Key		START/STOP
	MONITOR SETUP Key		STOP or CANCEL Key
	ALARMS Key		CONTINUE Key
	PREVIOUS MENU Key		ENTER Key
	ON — Power Connection to Mains		OFF — Power Disconnection from Mains
	ON Position for Push Button Power Switch		OFF Position for Push Button Power Switch
	On Direction		ON/OFF
	Television; Video Display		Video Output
	ON — Part of the Instrument Only		OFF — Part of the Instrument Only





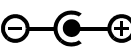




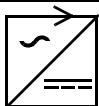








Ambulatory Blood Pressure Report Management System

Symbol	Description	Symbol	Description
	Stand-by		STAND-BY Key
	PAUSE or INTERRUPT		Slow Run
	Reset		Power Indicator LED
	Alarm		Temporary Shut Off of Alarm Tone or Screen Indicators
	Indicator — Remote Control		Indicator — Local Control
	PRINT REPORT Key		Indicator — Out of Paper
	Partial ON/OFF		Recorder Paper
	Normal Screen		Return to Prior Menu
	Clock/Time Setting Key		TREND/TIMER Key
	HELP (Explain Prior Screen) Key		Keypad
	Activate Recorder for Graphics		Indoor Use Only
	START (NIBP) Key		Auto Mode (NIBP)
	Output		No Output (Terminated)













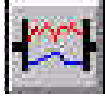







Symbol	Description	Symbol	Description
	Data Input/Output		Input/Output
	Input		Reset
	Menu Keys		Waveform/Parameter Keys
	Monitor Setup Select Program Options		Set Initial Conditions Menu
	Access Special Function Menu		Return Unit to Monitor Mode
	Serial Port 1		Serial Port 2
	External marker push button connection		SDLC Port
	Arterial Pulse		Electrocardiograph or Defibrillator Synchronization
	Gas Exhaust		Foot Switch
	Enlarge, Zoom		Delete
	PCMCIA Card		Event
	Keep Dry		Fragile; handle with care
	Environmental Shipping/Storage Altitude Limitations		This Way Up
	Environmental Shipping/Storage Temperature Limitations		Environmental Shipping/Storage Humidity Limitations

Ambulatory Blood Pressure Report Management System

Symbol	Description	Symbol	Description
	Open Padlock		Closed Padlock
	Down Arrow		Up Arrow
	Hard Drive		Power Indicator LED
	Antenna		Mermaid Connector
	Microphone		Omnidirectional Microphone
	Audio Output, Speaker		Activate Telemetry Recorder
	Network Connection		Universal Serial Bus
	Gas Sampling Port		Gas Return Port
	Remote Alarm; Nurse Alert		Nurse Call
	Battery Status		Low Battery
	Battery Replace only with the appropriate battery.		Replace only with the appropriate battery. (+ / - signs may be reversed)
	All batteries should be disposed of properly to protect the environment. Lithium batteries should be fully discharged before disposal. Batteries such as lead-acid (Pb) and nickel-cadmium (Ni-Cd) must be recycled. Please follow your internal procedures and or local (provincial) laws regarding disposal or recycling.		Caution - hazardous voltages. To reduce risk of electric shock, do not remove the cover or back. Refer servicing to a qualified service personnel (U.S.A.). DANGER - High Voltage (International)

Symbol	Description	Symbol	Description
	Protective Earth Ground		Functional Earth Ground
	Replace Fuse Only as Marked		Fuse
	Power supply jack polarity. (+ / - signs may be reversed)		Equipotentiality Terminal
	Alternating Current		Direct Current
	Both Direct and Alternating Current		AC/DC Input
A	Amperes	Hz	Hertz
V	Volts	W	Watts
	IEC 601-1 Type B equipment. The unit displaying this symbol contains an adequate degree of protection against electric shock.		Class II Equipment
	IEC 601-1 Type BF equipment which is defibrillator-proof. The unit displaying this symbol contains an F-type isolated (floating) patient-applied part which contains an adequate degree of protection against electric shock, and is defibrillator-proof.		IEC 601-1 Type BF equipment. The unit displaying this symbol contains an F-type isolated (floating) patient-applied part providing an adequate degree of protection against electric shock.
	IEC 601-1 Type CF equipment. The unit displaying this symbol contains an F-type isolated (floating) patient-applied part providing a high degree of protection against electric shock, and is defibrillator-proof.		IEC 601-1 Type CF equipment. The unit displaying this symbol contains an F-type isolated (floating) patient-applied part providing a high degree of protection against electric shock.
	Loop Filter		Adult NIBP

Ambulatory Blood Pressure Report Management System

Symbol	Description	Symbol	Description
	ETL Laboratory Approved		Canadian Standards Association Approved
	Risk of Explosion if Used in the Presence of Flammable Anesthetics		Operates on Non-Harmonized Radio Frequencies in Europe
Note	Note		Attention - Consult Operations or Service Manual for Description
WARNING	Warning About Potential Danger to Human Beings	CAUTION	Caution About Potential Danger to a Device
	Noninvasive Blood Pressure (NIBP), Neonate		Fetal Monitor Connection (Analog)
	Fetal Monitor Connection RS232 (Digital)		Physiological Monitor Connection RS232 (Digital)
	Happy Face		Sad Face
	Magnifying Glass		Compression
	File Cabinet		List of Rooms
	Arrows		Printer
	Recycle		Service Message
	Radio transmitting device; elevated levels of non-ionizing radiation		

Ambulatory Blood Pressure Report Management System

Abbreviations used as symbols are shown below.

Symbol	Description	Symbol	Description
1 - 32	Access Codes 1 Through 32	AIR	Air
ANT 1 ANT 2	Diversity Antenna System 1 Diversity Antenna System 2	Arr1 ArrNet2	Arrhythmia Net 1 Arrhythmia Net 2
CH ch	EEG, EMG, or ECG Channel EEG Channels - CH1, CH2, CH3, CH4 EMG Channel - CH5	cmH₂O	Centimeters of Water
C.O. CO co	Cardiac Output	DIA dia	Diastolic
ECG ecg	Electrocardiogram	EEG eeg	Electroencephalogram
EMG emg	Electromyogram	ESIS	Electrosurgical Interference Suppression
EXT	External	FECG	Fetal Electrocardiogram
FHR1 FHR2	Fetal Heart Rate, Channel 1 Fetal Heart Rate, Channel 2	GND gnd	Patient Isolated Ground
HLO hlo	High-Level Output	Multiview	Multi-Lead Electrocardiogram
NIBP nibp	Noninvasive Blood Pressure	N₂O	Nitrous Oxide
O₂	Oxygen	PRESS press PRS	Pressure
RESP resp	Respiration	SDLC	Synchronous Data Link Control
SPO2 SpO2 SpO₂ SaO₂	Arterial Oxygen Saturation as Measured by Pulse Oximetry	SVO2 SvO₂ SvO₂	Mixed Venous Oxygen Saturation

Ambulatory Blood Pressure Report Management System

Symbol	Description	Symbol	Description
SYS sys	Systolic	T1 T2 T3 T4	Temperature 1 Temperature 2 Temperature 3 Temperature 4
TEMP temp	Temperature	UA	Uterine Activity or Umbilical Artery
VAC	Vacuum Connection		